

B1  
from about 2 to 100 m<sup>2</sup>/g; a difference between BET (N<sub>2</sub>) surface area and t-area of from about 1 to 50 m<sup>2</sup>/g after HF treatment; a ratio of from about 0.1 to 10; a weight average aggregate size measured by DCP after HF treatment that is reduced by about 5% to 40%; a silica ash content in the aggregate of from about 0.05% to 1% based on the weight of the aggregate after HF treatment and based on ash resulting from silicon-containing compound; and a BET surface area of silica ash in the aggregate of from about 200 m<sup>2</sup>/g to 700 m<sup>2</sup>/g, wherein the silicon-containing species phase is present primarily at the surface of the aggregate.--

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**IN THE SPECIFICATION**

Please substitute the following amended parts of the specification as indicated in the above-identified application. (A version of the amended specification with markings to show the changes made is also attached).

On page 1, paragraph beginning on line 4 and ending on line 6:

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B2  
--This application is a Continuation-In-Part of U.S. Patent Application No. 08/837,493, filed April 8, 1997, now U.S. Patent No. 5,904,762, which is incorporated in its entirety by reference herein.--

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On page 6, paragraph beginning on line 11 and ending on line 28:

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B3  
--For purposes of the present invention, the aggregate comprising a carbon phase and a silicon-containing species phase and made from the processes of the present invention can also be identified as a silicon-treated carbon black. In the aggregate comprising a carbon phase and a silicon-containing species phase, a silicon-containing species, including but not limited to, oxides and carbides of silicon, may be distributed

Amendment

U.S. Patent Application No. 09/975,699

B3  
through at least a portion of the aggregate and is an intrinsic part of the aggregate which also contains the carbon phase. In other words, the silicon-treated carbon black or the aggregate does not represent a mixture of discrete carbon black aggregates and discrete silica aggregates. Rather, the silicon-treated carbon black of the present invention includes at least one silicon-containing region as part of the silicon-treated carbon black wherein the silicon-containing region is located at the surface of and/or within the silicon-treated carbon black. The silicon-containing species that is part of the aggregate of the present invention is not attached to a carbon black aggregate like a silane coupling agent, but actually is part, of the same aggregate as the carbon phase. The disclosures of U.S. Patent Application No. 08/446,141, filed May 22, 1995, now U.S. Patent No. 5,830,930, U.S. Patent Application No. 08/446,142, filed May 22, 1995, now U.S. Patent No. 5,877,238, and U.S. Patent Application No. 08/750,016, filed February 25, 1997, now U.S. Patent No. 5,916,934, which is a National Phase application of PCT Published Application No. WO 96/37546 are incorporated in their entirety herein by reference.--

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On page 6, paragraph beginning on line 29 and ending on page 7, line 2:

B4  
--When the silicon-treated carbon black is examined under scanning transmission electron microscope-energy dispersive x-ray (STEM-EDX), the silicon signal corresponding to the silicon-containing species is found to be present in individual carbon black aggregates. By comparison, for example, in a physical mixture of silica and carbon black, STEM-EDX examination reveals distinctly separate silica and carbon black aggregates. --

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On page 12, paragraph beginning on line 5 and ending on line 12:

B5  
--In general, the multi-phase aggregates of the present invention can be used

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either in nonagglomerated form, i.e., fluffy, or in agglomerated form. The multi-phase aggregate can be agglomerated in wet or dry processes as known in the art. During the wet agglomeration process, different types of pelletizing agents (e.g., binders and the like) can be added to the pelletizing water, see e.g. WO 96/29710, incorporated herein by reference. Also, a coupling agent may be attached to the aggregate before or after pelletization, as described in U.S. Patent Application Number 08/850,145, now U.S. Patent No. 5,977,213, incorporated in its entirety herein by reference. --

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On page 13, paragraph beginning on line 7 and ending on line 14:

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--The weight percent of silicon in the silicon-treated carbon black preferably ranges from about 0.1% to about 25%, and more preferably from about 0.5% to about 10%, and most preferably from about 4% to about 10% by weight or from about 8% to about 15% by weight of the aggregate. From an economical point of view, the use of less silicon is preferable to the extent that it reduces the cost to make the aggregate, provided acceptable performance characteristics are achieved. It has been found that injecting a silicon-containing compound into the carbon black reactor can result in an increase in the structure (e.g., dibutylphthalate adsorption of the crushed carbon black (CDBP)) of the product. --

On page 26, paragraph beginning on line 1 and ending on line 9:

BN  
--Another preferred set of organic groups which may be attached to the carbon black are organic groups having an aminophenyl, such as  $(C_6H_4)-NH_2$ ,  $(C_6H_4)-CH_2-(C_6H_4)-NH_2$ ,  $(C_6H_4)-SO_2-(C_6H_4)-NH_2$ . Preferred organic groups also include aromatic sulfides, represented by the formulas  $Ar-S_n-Ar'$  or  $Ar-S_n-Ar''$ , wherein Ar and Ar' are independently arylene groups, Ar'' is an aryl and n is 1 to 8. Methods for attaching such

B7  
organic groups to carbon black are discussed in U.S. Patent. Nos. 5,554,739; 5,559,169; U.S. Patent Application No. 08/356,660, now abandoned, and U.S. Patent Application No. 08/572,525, now U.S. Patent No. 5,851,280; and PCT Published Patent Application Nos. WO 96/18688 and WO 96/18696, all of the disclosures of which are fully incorporated by reference herein.--

On page 29, paragraph beginning on line 3 and ending on line 10:

B8  
sp  
--Silicon-treated carbon blacks according to the present invention were prepared using a pilot scale reactor generally as described above, and as depicted in the Fig. having the dimensions set forth below:  $D_1 = 7.25$  inches,  $D_2 = 4.5$  inches,  $D_3 = 5.3$  inches,  $D_4 = 13.5$  inches,  $L_1 = 24$  inches,  $L_2 = 12$  inches,  $L_2' = 45$  inches (for Example OMTS-CB-A', wherein OMTS-CB is defined as octamethylcyclotetrasiloxane - carbon black) and  $L_2' = 25$  inches (for Examples OMTS-CB-B', C', D', and E') and  $Q = 8.583$  feet (for Examples OMTS-CB-A', B' and C'),  $Q = 6.5$  feet (for Examples OMTS-CB-D' and E'). The reaction conditions set forth in Table 1 below, were employed. --

On page 32, paragraph beginning on line 3 and ending on line 14:

B9

OMTS-CB-	A'	B'	C'	D'	E'
Air Rate kscfh*	60	60	60	60	60
Gas Rate, kscfh	4.9	4.9	4.9	4.9	4.9
Feedstock Rate at point 6, lbs/hr	351	373	381	488	284
Feedstock Rate at point 7, lbs/hr	287	305	312	163	418
OMTS rate at point 7, lbs/hr	22.2	50.2	50.2	46.6	46

\*wherein kscfh is defined as thousand standard cubic feet per hour

On page 34, paragraph beginning on line 1 and ending on line 20:

	N234	D4-CB
SSBR (Duradene 715)	75	75
BR (Tacktene 1203)	25	25
N234	75	-
OMTS-CB	-	75
Si 69	-	3
Oil (Sundex 8125)	25	25
Zinc Oxide	3.5	3.5
Stearic Acid	2	2
Antioxidant (Flexzone 7P)	1.5	1.5
Wax (Sunproof Improved)	1.5	1.5
Durax	1.5	1.5
Vanax DPG	-	1
TMTD	0.4	0.4
Sulfur	1.4	1.4

On page 38, paragraph beginning on line 3 and ending on line 14:

	MPCS-1	MPCS-2	MPCS-3	MPCS-4
Air Rate nm <sup>3</sup> /h*	1605	1606	1605	1607
Gas Rate nm <sup>3</sup> /h	132	133	134	133
Feedstock rate at point 6, kg/hr	266	298	334	346
OMTS rate at point 7, kg/hr	87.2	44	51	29.1
Feedstock (Iso-propanol) rate at point 7, kg/hr	0	0	49	69

\* wherein nm<sup>3</sup>/h is defined as cubic nanometer per hour